

## REMARKS

In response to the Office Action dated October 20, 2006, claims 35, 36, 41, and 42 have been amended. No new matter has been added. Reexamination and reconsideration of the claims as requested is respectfully requested.

In paragraph 4 on page 2 of the Office Action, claims 35-46 are rejected under 35 U.S.C. § 112 first paragraph as failing to comply with the enablement requirement; in paragraph 5 on page 3, claims 35-46 are rejected as based upon a disclosure which is not enabling; in paragraph 6 on page 3, claims 39, 40, 45 and 46 are rejected as failing to comply with the written description requirement. Applicant respectfully traverses this rejection. Claims 35, 36, 41 and 42 have been amended to overcome the instant rejection. It is believed that all claims, as amended, comply with 35 U.S.C. § 112.

More specifically, the Examiner stated that:

A "diaphragm" is commonly known as elastic, flexible, material often used in pressure application. As such it is unclear how the structure, which contains pores, can function or be referenced as diaphragm as claimed by applicant.

*Dictionary.com*, as queried on November 13, 2006, defines "diaphragm" as:

1. Anatomy.
  - a. a muscular, membranous or ligamentous wall separating two cavities or limiting a cavity.
  - b. the partition separating the thoracic cavity from the abdominal cavity in mammals.
2. Physical Chemistry.
  - a. a **porous plate** separating two liquids, as in a galvanic cell.
  - b. a **semipermeable membrane**.
3. a thin disk that vibrates when receiving or producing sound waves, as in a telephone, microphone, speaker, or the like.
4. Also called pessary. a thin, dome-shaped device, usually of rubber, for wearing over the uterine cervix during sexual intercourse to prevent conception.
5. a plate with a hole in the center or a ring that is placed on the axis of an optical instrument, as a camera, and that controls the amount of light entering the instrument.

6. a plate or web for stiffening metal-framed constructions. –verb (used with object)
7. to furnish with a diaphragm.
8. to reduce the aperture of (a lens, camera, etc.) by means of a diaphragm.

(Emphasis added.)

According to the above-noted dictionary definition of "diaphragm", the expression "diaphragm" covers a porous plate or a semipermeable membrane. Consequently, it is believed that it is not necessary to replace the word ""diaphragm" in the claims and specification.

In item 5 on page 3 of the Office action, claims 35-46 have been rejected by the Examiner under 35 U.S.C. § 112, first paragraph, as being based on a disclosure which is not enabling.

The Examiner stated that:

A controller is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The pump alone does not function as to control the pressure as claimed.

It could be that the pump is adjusted such or is just able to produce a reduced (negative) pressure that is just above the critical pressure, thereby not requiring a controller.

According to MPEP § 2172.01 (8E3R):

**2172.01 Unclaimed Essential Matter**

A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling. *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Nowhere does the specification state that a controller is a critical or essential component. It is therefore believed that a controller is not essential to the invention as described in the specification and recited in the claims.

In item 6 on page 3 of the Office action, claims 39-40 and 45-46 have been rejected by the Examiner under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement

More specifically, the Examiner stated that:

Claims 39 and 45 are directed to a new negative limitation not previously required. Where is such a claimed supported? If the medium is not liquid, then that implies the medium can be any other material such as gas, plasma, suspensions, etc. The medium should be claimed as positively of what it is rather than what it is not.

Support for the subject-matter of claims 39 and 45 can be found in paragraph 0098 where the medium to be analyzed is a gas and not the liquid recited in the independent claims. Consequently, it is believed that there is support for the claim feature of claims 39 and 45.

The Examiner also stated that:

The diaphragm 406 is described as being hydrophobic but there is no support of the diaphragm being hydrophilic as claimed.

Paragraph 0084 of the instant application states "diaphragm 406 is hydrophilically configured", and paragraph 0098 states "hydrophobic diaphragm 406". Consequently, it is believed that there is support for the claim feature "said diaphragm is hydrophilic or hydrophobic".

In paragraph 8 on page 4 of the Office Action, claims 35-46 are rejected under 35 U.S.C. § 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which is regarded as the invention. The

Applicants respectfully traverse this rejection, but have amended the application to overcome the objections. Claims 35, 36, 41 and 42 have been amended. It is believed that all claims comply with 35 U.S.C. § 112.

More specifically, the Examiner stated that:

It is unclear what applicant considers as a "diaphragm". In the specification elastic pressure application element 207 is referenced as a diaphragm as well porous element 406 is also referenced as a diaphragm. It appears if the porous element is a filter or similar porous membrane and referring to the element as a "diaphragm" is contradictory to how such a structure is defined by one of ordinary skill in the art. As such it is unclear what applicant intends to claim.

The "diaphragm 207" is used, and only used, in the **first** embodiment, which is illustrated in FIGS. 1-3. The "diaphragm 406" is used in the **second** embodiment, which is illustrated in FIGS. 4-6. Applicant understands the difficulties caused by the differing meaning of "diaphragm 207" and "diaphragm 406". Yet it is believed that the claims are clear in view of the disclosure in the specification and drawings. (The Examiner is also directed to the previous discussion regarding the rejection made in item 4 on page 2 of the Office action.)

Furthermore, the Examiner stated that:

It is unclear how the apparatus is a capillary device when no capillary element is claimed. Furthermore no structural analysis element is claimed to perform any analysis, therefore it is unclear how the device is used for analyzing. No analysis occurs in the method claims.

The recited pipette is the capillary element. The preamble of the independent claims has been amended to recite "taking up a medium to be analysed".

The Examiner stated that:

The phrase citing at least one pore of a given radius is unclear. The phrase 'a given radius' is not a specified dimension as to determine what exactly is

the dimension of the pore. A given radius can be any radius one chooses, for the claim places no limitations on the radius.

The Examiner is correct; the radius is not precisely defined in the independent claims.

The Examiner stated that:

As to the claims citing the pump produces a reduced pressure that does not go below a critical pressure to overcome liquid in the pore, the examiner asserts any vacuum pump or pump capable of creating a negative pressure is equivalent to the claimed pump.

It is unclear what one considers "a reduced pressure". Reduced as compared to what? The term reduced is in relevance to some standard. There is no specified standard for one to determine what is reduced. It appears as if the more accurate term would be negative pressure.

In order to be responsive to the Examiner's comments and suggestions and to expedite prosecution, the phrase "reduced pressure" has been replaced with the phrase "negative pressure".

The Examiner stated that:

It should be noted the effect in which a pump is going to have on a liquid present in the device will depend from a number of factors, including pore size, the type of particular liquid (viscosity), the type of material the diaphragm is manufactured from, surface tension of such material (is it hydrophobic or hydrophilic in reference to the particular liquid). Without specifying the factors as stated above the device and method as claimed will not function.

A working example using water is stated in paragraph 0093. It should not require undue experimentation to use the present invention for other mediums than water.

Furthermore, the Examiner stated that:

Claim 38 is directed to how the device is intended to be used. The medium is not positively claimed as an element of the invention.

The "medium to be analysed" is not an element of feature of the present invention, but is merely a workpiece. Consequently, the workpiece "medium to be analysed" is not **positively** introduced in the **body** of the claim, but is **inferentially** introduced in the **preamble** of the independent claims.

It is accordingly believed that the specification and the claims meet the requirements of 35 U.S.C. § 112, first and second paragraph. The above-noted changes to the claims are provided solely for the purpose of satisfying formal requirements, clarification, or are made solely for cosmetic reasons to clarify the claims. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claims for any reason related to the statutory requirements for a patent.

In paragraph 11 on page 7 of the Office Action, claims 35-46 are rejected under 35 U.S.C. §102 (a) as being anticipated by Bjorkman (U.S. 4,642,220); in paragraph 12 on page 7, claims 35-46 are rejected as being anticipated by Moulton (U.S. 5,851,491); in paragraph 13 on page 8, claims 35-46 are rejected as being anticipated by Kitajima, et al. (U.S. 6,225,130). Applicant respectfully traverses these rejections.

The rejections and the Examiner's comments have been considered. However, as will be explained below, it is believed that the claims were patentable over the applied references in their original form and the claims have, therefore, not been amended to overcome the applied references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 35 (similarly claim 41) recite, *inter alia*:

a pipette, said pipette having a diaphragm containing at least one pore of a given radius;

a pump, said pump producing a reduced pressure in said pipette wherein said reduced pressure does **not** go below a critical pressure **at which the surface tension of a liquid** present at said at least one pore of said diaphragm **would be overcome**.

(Emphasis added.)

It is believed that the elements and features of the claims, due to the numerous U.S.C. § 112 rejections, have been given a very broad reading or no patentable weight.

The inventive concept of an embodiment of the invention of the instant application is to utilize the capillary effect of a liquid to ensure that only the medium to be analyzed, whether in liquid form or gas form, is taken up into the capillary device. This is achieved by using a diaphragm with a pore and a liquid at the pore of the diaphragm, and to use only a reduced (negative) pressure in the pipette not going below a critical pressure at which the surface tension of a liquid present at the pore would be overcome. Three elements have to be present and interact: a diaphragm with a pore, a liquid at the pore, and a reduced pressure not exceeding the surface tension of the liquid present at the pore.

Neither *Bjorkman*, *Moulton*, or *Kitajima et al.* of the applied reference disclose (or suggest) these claim features. Therefore, the invention as recited in claims 35 and 41 of the instant application is believed to be novel over *Bjorkman*, *Moulton*, or *Kitajima et al.* Claim 35 and 41 are, therefore, believed to be patentable and because claims 36-40 are ultimately dependent on claim 35 and because claims 42-46 are ultimately dependent on claim 41, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 35-46 are solicited.

### **CONCLUSION**

In view of the amendments and reasons provided above, it is believed that all pending claims are in condition for allowance. The amendments clarify the patentable invention without adding new subject matter. Applicant respectfully requests favorable reconsideration and early allowance of all pending claims.

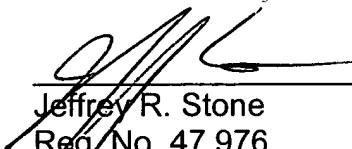
If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Jeffrey R. Stone at 952 253-4130.

Respectfully submitted,

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